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ABSTRACT

This study examines the interaction of mother-son dyads as a function of mothers' and sons' locus of control and the demand characteristics of specific tasks. The subjects were 32 third grade boys from parochial schools in the District of Columbia area and their mothers. They were assigned to internal or external locus of control groups based on a median split of the distribution of their locus of control scores. Subjects were observed as they interacted during a directive and nondirective teaching task and a non-teaching task. Dependent variables that were examined included preference, time to completion, and quality of performance on the teaching task and frequency of positive and negative behavior displayed during the non-teaching task. Results indicated that mothers of external sons preferred the directive over the nondirective task, whereas mothers of internal sons displayed no differences in their level of preference for either task. In addition, external sons were found to require significantly more time to complete the non-directive task than the directive task. With regard to the non-teaching task, external mothers displayed a significantly higher frequency of positive behavior (approval, agreement, and positive affect commands) with internal than with external sons. Implications of these results and recommendations for further research are discussed. (Author/DST)

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Locus of Control and Task Effects in Mother-Son Interactions

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Abstract

The present study examined the interaction of mother-son dyads as a function of mothers' and sons' locus of control and the demand characteristics of specific tasks. The subjects of this study were 32 third-grade boys and their mothers from parochial schools in the Washington, D.C. area. Both mothers and sons were assigned to internal or external locus of control groups based on a median split of the distribution of their locus of control scores. Children and their mothers were observed as they interacted during a directive and a nondirective teaching task and a non-teaching task. Dependent variables that were examined included preference, time to completion, and quality of performance on the teaching task and frequency of positive and negative behavior displayed during the non-teaching task. Results indicated that mothers of external sons preferred the directive over the nondirective task, whereas mothers of internal sons displayed no differences in their level of preference for either task. In addition, external sons were found to require significantly more time to complete the nondirective task than the directive task. With regard to the non-teaching task, external mothers displayed a significantly higher frequency of positive behavior (approval, agreement, and positive affect commands) with internal than with external sons. Implications of these results and recommendations for further research are discussed.

A great deal of attention has been focused on the construct of locus of control during the past two decades. First developed by Rotter (1954), locus of control is conceptualized as an individual's expectancy regarding the locus of control of reinforcement. It refers to the degree to which individuals believe that events they encounter are determined by their own abilities or efforts (internal locus of control) or by luck, chance, or powerful others (external locus of control).

Extensive research has demonstrated that locus of control in adults and in children is related to individual differences in such areas as information-processing, achievement, interpersonal behavior, and psychological adjustment. These research results have been summarized in reviews by Joe (1971), Lefcourt (1966, 1976), Phares (1976), and Strickland (1977). In general, the majority of studies suggest that internals demonstrate more positive performance and characteristics than do externals.

The extent of the literature which supports a more positive view of internality than externality is puzzling in light of the theoretical basis of the construct. Social-Learning Theory clearly assumes that locus of control develops as a result of experience and is therefore subject to the laws of learning. If internal locus of control is so consistently more adaptive, externality should extinguish or at least become extremely rare. Why, then, is externality as prevalent as it is? Why is externality learned at all? There are many possible explanations for this question within Social-Learning Theory. One of the more intriguing is that externality is adaptive and is rewarded under certain conditions. Research on locus of control and task

effects (Baron & Ganz, 1972; Coppel & Smith, 1980; Waters, 1972) suggests that the conditions under which externality is adaptive have not been sufficiently covered in the literature and require further exploration.

The present study examined the interaction of mother-child dyads as a function of mother-child locus of control and of the demand characteristics of specific tasks. Several limitations in the literature on parent-child interaction and locus of control have been improved upon. In light of the prevalence of research which has utilized retrospective and self-report data, this project has attempted to increase the validity of its results with observational data. The few studies in this area that have used observational data have generally examined behavior during teaching tasks, which require the parent to exert a large amount of control over the child. This study has expanded upon that model by examining behavior in the context of both a teaching and a non-teaching situation. The non-teaching task allowed for a mutual sharing of control, so that it may generalize to a wider variety of parent-child interactions than would a teaching task. Another improvement upon past research in this area was the utilization of both nondirective and directive teaching tasks which were designed to differentially tap the strengths of internal and external subjects and thus control for task effects. Finally, in contrast to past research on parent-child interaction which has usually examined the effect of either parent or child locus of control, this study has examined the effect of parent and child locus of control together in order to investigate possible interaction effects.

Procedure

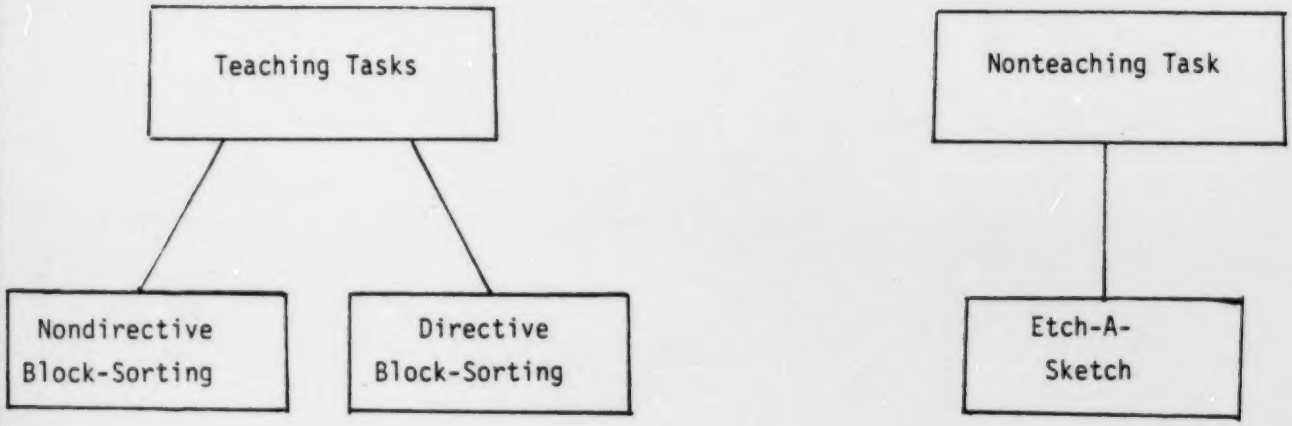
The subjects for this study were 32 third-grade boys and their mothers from the parochial school system in the Washington, D. C. area. Based on a median split of the distribution of scores from the Children's Nowicki-Strickland Scale (Strickland, 1972), the boys were assigned to two groups, internal and external locus of control. Mothers were assigned to internal or external locus of control groups based on a median split of the distribution of their scores on the Adult Nowicki-Strickland I-E Scale (Nowicki & Duke, 1974). Children and their mothers were asked to participate in a nondirective teaching task, a directive teaching task, and a non-teaching task (See Figure 1).

Insert Figure 1 about here

Block sorting tasks were used for the directive and nondirective teaching situations which were adapted from Hess, Shipman, et al. (1968). Each task required that children sort a set of eight blocks according to two out of four characteristics (size, shape, color and mark). The parent was taught each task and was given instructions for teaching the child the task in a standardized directive and nondirective manner. After the mother taught the task to the child, a research assistant tested the child's understanding of the task. Dependent variables that were measured with regard to the teaching tasks included the childs' performance, the amount of time required for completion, and mothers' and childrens' preference ratings.

The non-teaching task required mothers and sons to

Figure 1. Teaching and Non-Teaching Tasks.



cooperatively interact to copy five geometric designs with an Etch-A-Sketch toy. The toy consists of a screen on which lines may be drawn by manipulating two knobs, one which causes a line to be drawn on a vertical axis and the other which causes a line to be drawn on a horizontal axis. The task required the mother to control one knob and the child to control the other. Children and their mothers were videotaped as they attempted to copy the designs and their behaviors were coded with a Parent-Child Interaction Coding Scheme adapted from Cunningham and Boger (1972). Mothers' and sons' behaviors during this task were coded with a time-sampling technique in which one behavior was coded for each person for each 10 second unit of interaction. For the purpose of analyses, behaviors were collapsed into two categories: positive behaviors (approval, agreement, and positive affect command) and negative behaviors (disapproval, disagreement, and negative affect command). After raters reached the interrater reliability criterion of 90 per cent agreement using Cohen's Kappa, reliability was checked intermittently in order to ensure that the criterion was maintained.

Results

With regard to teaching tasks, mothers' preference ratings in response to the directive versus the nondirective task were compared with a three-way (mothers' locus of control X sons' locus of control X teaching situation) repeated measures ANOVA was conducted (See Table 1). This analysis revealed a significant effect for sons' locus of control, $F(1,28) = 6.90$, $p < .01$. A post-hoc analysis was then conducted with a paired-samples t-test, which indicated that mothers of external sons

preferred the directive (M = 4.13) over the nondirective task (M = 3.67), $t(14) = 1.82$, $p < .05$, whereas mothers of internal sons displayed no significant differences in their level of preference for either task.

Insert Table 1 About Here

Differences between sons' preference ratings, quality of performance and time to completion on the directive versus nondirective teaching tasks were analyzed with three different three-way (mothers' locus of control X sons' locus of control X teaching situation) repeated measures ANOVAs (See Table 2).

Insert Table 2 About Here

The analysis of sons' preference ratings and quality of performance yielded no significant results. However, the analysis of sons' time to completion revealed a significant interaction effect between sons' locus of control and teaching situation, $F(1,28) = 6.71$, $p < .01$ (See Figure 2). A post-hoc paired-samples t-test conducted to investigate the nature of this interaction effect indicated that external children required significantly more time to complete the nondirective task than they required to complete the directive task, $t(14) = 2.55$, $p < .01$, whereas no significant differences were detected for time to completion required by internal children, $t(16) = 1.11$.

Table 1

Cell Means and Standard Deviations for Mothers' Responses to Teaching Tasks

Variables	I Sons		E Sons	
	I Mothers (n = 7)	E Mothers (n = 10)	I Mothers (n = 10)	E Mothers (n = 5)
Directive Preference				
M	3.00	3.40	4.00	4.40
SD	1.00	.52	.94	.55
Nondirective Preference				
M	3.14	3.50	3.40	4.20
SD	.69	.84	1.17	.83

Table 2

Cell Means and Standard Deviations for Sons' Responses to Teaching Task

	I Sons		E Sons	
Variables	I Mothers (n = 7)	E Mothers (n = 10)	I Mothers (n = 10)	E Mothers (n = 5)
Directive Preference				
M	4.43	4.20	4.40	4.20
SD	.79	1.32	.84	.84
Nondirective Preference				
M	4.71	4.20	4.50	4.20
SD	.76	1.13	1.08	.84
Directive Time				
M	205.70	160.00	165.00	182.00
SD	76.30	66.30	79.90	47.60
Nondirective Time				
M	162.80	143.00	335.00	290.00
SD	130.90	87.40	312.70	135.10
Directive Total Score				
M	4.86	6.00	6.00	6.00
SD	2.27	0.00	0.00	0.00
Nondirective Total Score				
M	5.00	5.50	4.60	5.60
SD	1.53	1.27	1.58	.89

Insert Figure 2 about here

In order to maximize the power of the non-teaching task, analyses were conducted to examine the frequency of positive and negative behaviors displayed by mother-son pairs during their attempt to construct the two most difficult designs on the Etch-A-Sketch task. Four two by two (mothers' locus of control X sons' locus of control) ANOVAs were conducted (See Table 3).

Insert Table 3 About Here

No significant effects were detected for mothers' or sons' negative behaviors nor sons' positive behaviors during the Etch-A-Sketch task. However, the analysis of mothers' positive behaviors revealed a significant interaction effect between mothers' and sons' locus of control orientations, $F(1,28) = 6.81$, $p < .01$ (See Figure 3). Post-hoc analyses of this interaction effect conducted with two one-way ANOVAs indicated that external mothers displayed a significantly higher frequency of positive behaviors with their internal than with their external sons, $F(1,13) = 5.83$, $p < .05$, whereas internal mothers did not display any significant differences in the frequency of positive behaviors displayed with their internal versus their external sons, $F(1,15) = .66$.

Insert Figure 3 about here

Figure 2. Sons' Time to Completion (in Seconds) on the Teaching Task as a Function of Teaching Situation X Sons' Locus of Control.

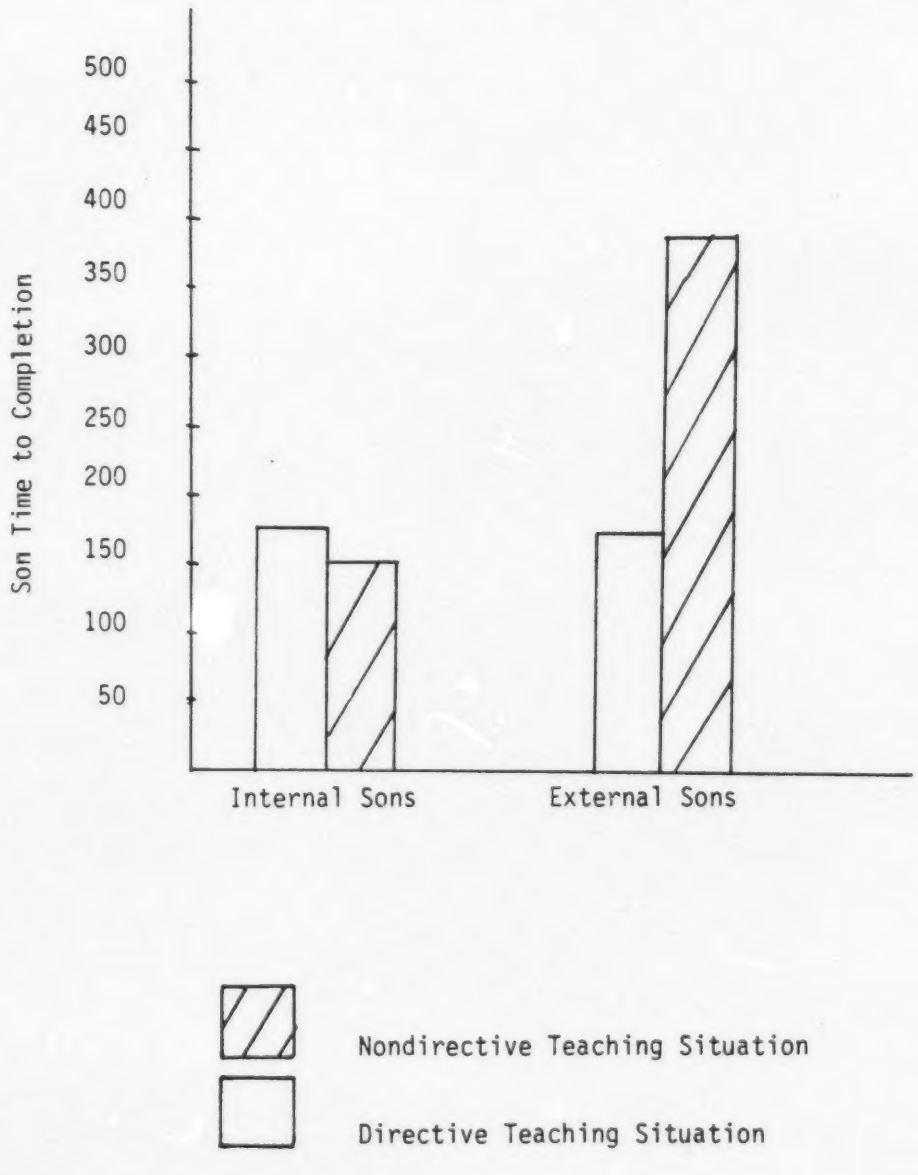
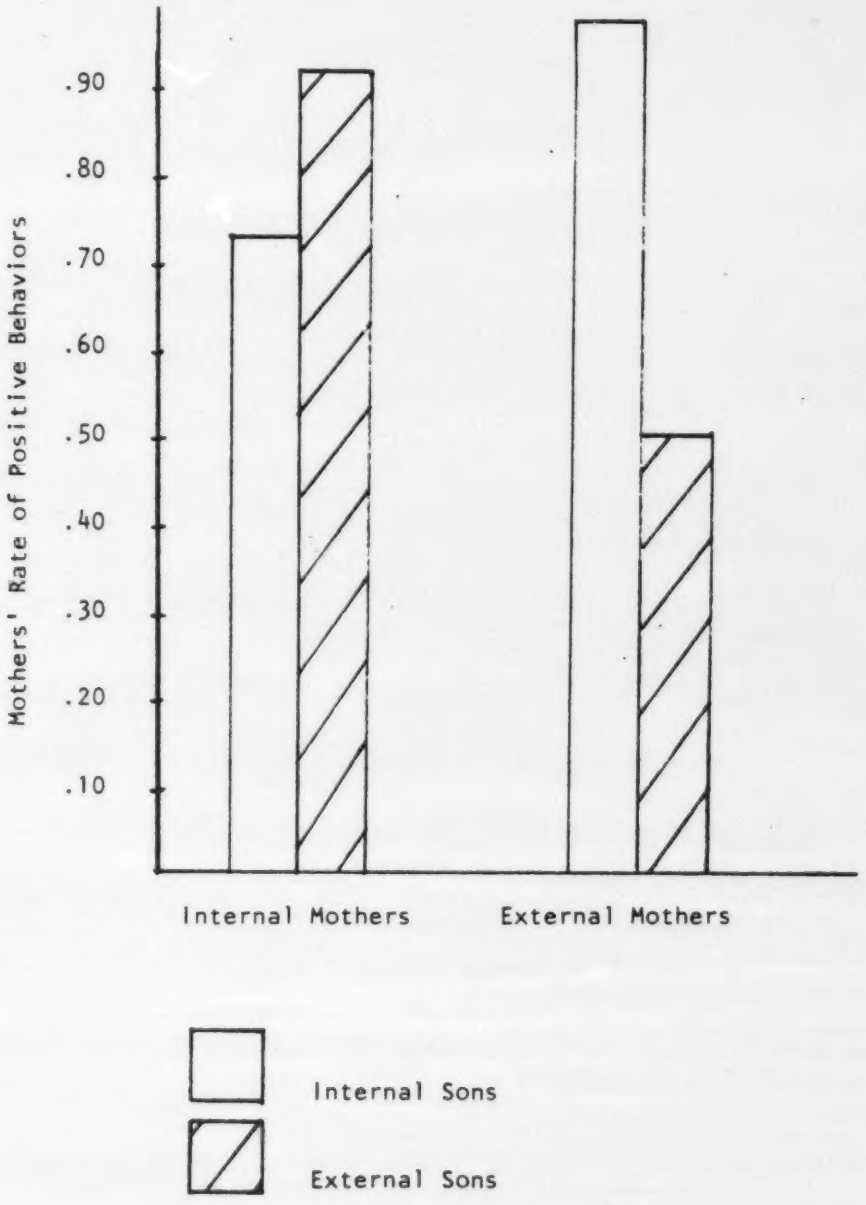


Table 3

Cell Means and Standard Deviations for Mothers' and Sons' Responses to Two Designs of the Non-teaching Task

	I Sons		E Sons	
Variables	I Mothers (n = 7)	E Mothers (n = 10)	I Mothers (n = 10)	E Mothers (n = 5)
Effect				
Mothers' Positive Behaviors				
M	.72	.98	.91	.50
SD	.24	.43	.33	.28
Mothers' Negative Behaviors				
M	.20	.16	.10	.11
SD	.30	.32	.10	.07
Sons' Positive Behaviors				
M	.39	.34	.38	.66
SD	.23	.35	.33	.41
Sons' Negative Behaviors				
M	.18	.08	.10	.16
SD	.22	.11	.07	.13

Figure 3. Mothers' Rate of Positive Behaviors (Positive Behaviors/ Total Behaviors) on Two Designs of the Non-teaching Task as a Function of Mothers' X Sons' Locus of Control.



Discussion

The present study lends support to the notion that it is important to consider the demand characteristics of specific tasks and the locus of control orientation of both parent and child in studies on parent-child interaction and locus of control. Results of analyses conducted with respect to both the teaching and the non-teaching tasks support this point of view.

Previous research on parental teaching styles (Chandler, et al., 1980; Johnson, 1980; Loeb, 1975) has indicated that parents of internal children prefer nondirective teaching styles and parents of external children prefer directive teaching styles. The results of the present study replicated those of past research only with regard to mothers of external children, who preferred the directive teaching situation. Mothers of internal children, in contrast, displayed no particular preference for either the directive or the nondirective task. However, the mean preference score for mothers of internal children was higher on the nondirective than the directive task. It is possible that a larger sample size or a more discriminating measure of preference level would indicate that mothers of internal children prefer nondirective teaching situations.

It appears that the mothers' preference for a particular teaching style is more a function of the child's locus of control than of her own particular orientation. This would imply that mothers may change their teaching style depending on the locus of control orientation of the child. However, it is not clear whether mothers of external children prefer directive teaching situations because that mode works best with their external child, or

whether children become external because their mothers tend to take control. These issues would best be investigated with additional research which examines the interaction of mothers with more than one of their children in dyadic teaching situations.

With regard to sons' responses to the teaching tasks, the analysis of time to completion indicated that external children required significantly more time to complete the nondirective versus the directive task, whereas internal children displayed no significant differences. Thus, external sons may require more time to complete a nondirective teaching task, but the solutions they derive are just as valid as those of internal sons. Past research which indicates that internals are superior to externals may thus be biased because of task effects and because the externals may not have been allotted sufficient time to arrive at a solution.

Analyses of mothers' behaviors during the non-teaching task indicated external mothers displayed significantly more positive behaviors with their internal than with their external sons. This result contradicts Davis and Phares' study (1969), which found that parents whose children had a locus of control orientation similar to their own expressed less disciplinarian and more indulgent child-rearing attitudes on the Maryland Parent Attitude Survey. There are several possible explanations for this discrepency. It may be that positive and negative behaviors as coded with the Parent-Child Interaction Coding Scheme used in this study do not sufficiently compare with indulgent and disciplinarian child-rearing attitudes on the Maryland Parent

Attitude Survey. Another plausible explanation is that self-report attitudes and observed mother-child interactions are not sufficiently similar. In addition, it is not clear whether either self-report attitudes on the Maryland Parent Attitude or behaviors observed during the Etch-A-Sketch task reliably reflect the types of behaviors that actually occur in child-rearing situations. Further research on mother-child interaction in a variety of contexts needs to be conducted in order to more fully understand the nature of the effect of similar versus dissimilar locus of control orientations on behavior.

In summary, the present study validates the importance of considering the locus of control orientation of both mother and child and of examining task effects in research on parent-child interaction and locus of control. The results of this study support past research which found that mothers of external sons prefer to teach directively. In addition, although both external and internal children performed comparably well on the teaching tasks, external children were found to require more time to complete the nondirective task than internal children. Thus, past research which has found externals to be inferior may have arrived at such a conclusion because of task effects or because externals were not allowed sufficient time to arrive at a given solution. With regard to the non-teaching task, this study did not support past research which found that mothers of children with a similar locus of control were more indulgent and less authoritarian than mothers of children with a dissimilar locus of control orientation. Instead, the data indicated that external mothers displayed more positive behaviors with internal than with

external sons. These results indicate that internal sons with external mothers may be at some advantage over external sons, and may offer some explanation for past research which has found internality to be superior to externality. Further research could clarify the nature of mother-son interaction in relation to locus of control through examining behavior sequentially. Since the construct of locus of control is concerned with expectancies of reinforcement, an examination of behavioral contingncies with observational data would be a most useful direction for future research.

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